Atypical symptom expression of common bacterial blight in tropical Pompadour germplasm

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Common bacterial blight caused by Xanthomonas campestris pv. phaseoli (Xcp) is a major constraint to bean production throughout the world. A characteristic of infected leaves is a narrow irregular shaped lemon-yellow zone surrounding the necrotic lesion. In the lowland bean production areas of the Dominican Republic and in Puerto Rico, we often observed lesions that lacked any chlorotic zone on leaves of Pompadour germplasm that were either the result of inoculation with Xcp or due to natural infection of Xcp. Xcp could always be isolated from these leaves. In experiments conducted at the Isabela Substation in Puerto Rico for two years, 27 bean genotypes were evaluated for natural common blight severity at 46 days after planting. Included in these genotypes were 25 red mottled breeding lines and Pompadour landrace components. All genotypes, including two red kidney genotypes, had similar maturities. The determinate red mottled genotypes as a group exhibited little or no leaf chlorosis in both years. Indeterminate Pompadour genotypes expressed typical chlorotic symptoms. environment may also suppress the expression of the chlorotic zone symptom, determinate red mottled genotypes such as Pompadour Checa do not exhibit the typical leaf symptoms of common blight. This type of symptom, when present, needs to be included in reports of bean evaluations for reaction to Xcp. It would be interesting and useful to determine if other determinate Andean bean types show the same characteristic. It also would be useful to determine if genes different than those that determine the leaf necrotic reaction determine the presence of the chlorotic areas (presumably due to an Xcp toxin).